I claim:

1. A mechanical drive apparatus comprising:

at least one electric motor having a first winding end surface and a second winding end surface;

a gear case having gears wherein at least one said electric motor provides rotation to said gears and having a mating area wherein said mating area is affixed to said first windings end surface;

a first gap pad space between said first windings end surface and said mating area;

a first gap pad comprised of thermally conductive gap filling material in said first gap pad space and compressed between said first windings end surface and said mating area.

2. The mechanical drive apparatus according to claim 1 further comprising:

a heat sink having a mating area capable of accepting said second windings end surface and matingly attached thereto;

a second gap pad space between said heat sink mating area and said second windings end surface;

a second gap pad comprised of thermally conductive gap filling material in said second gap pad space and compressed between said heat sink mating area and said second windings end surface.

3. The mechanical drive apparatus according to claim 1 wherein said thermally conductive gap filling material is a compliant polymer of high thermal conductivity.

4. The mechanical drive apparatus according to claim 1 wherein said thermally conductive gap filling material is a Bergquist Gap Pad Tm 3000.

5. A mechanical drive apparatus according to claim 4 wherein said thermally gap filling material has a thickness of 0.125 inches.

6. A method of reducing temperature rise in electric motor / gear case applications comprising:

providing a thermally conductive gap filling material in compression between a first windings end surface of an electric motor and a mating surface of a gear case.

7. The method according to claim 6 further comprising:

providing a thermally conductive gap filling material between a second windings end surface of an electric motor and a mating surface of a heat sink.

8. The method according to claim 7 wherein said thermally conductive gap filling material comprises a compliant polymer of high thermal conductivity.

9. The method according to claim 7 wherein said thermally conductive gap filling material is a Bergquist Gap Pad ' 3000.

10. The method according to claim 9 wherein said conductive gap filling material is 0.125 inches thick.

11. The mechanical drive apparatus according to claim 1 further comprising

a liquid heat transfer compound;

a motor lamination stack wherein said liquid heat transfer compound is in intimate thermal communication between said motor and said motor lamination stack.

12. The method according to claim 6 further comprising:

pouring a liquid form heat transfer compound into the gap between the motor and the motor lamination stack.